

Abstract

The present invention relates to a reaction system whereby a peptide produced in an *in vitro* peptide synthesis system can be efficiently isolated at a high purity from the reaction system. Thus the present invention is a process for producing a peptide or a peptide derivative by using a reaction system of transcribing a DNA into an RNA and then translating the RNA produced or a reaction system of translating an RNA *in vitro* wherein at least one protein component of the reaction system is labeled with a first substance which adheres to a second substance, and said second substance is used as an adsorbent for capturing said labeled protein components after translating.